

Extraction of the CKM phase γ using charmless 3-body decays of B mesons

Emilie Bertholet, Eli Ben-Haïm, Matthew Charles

Abstract

In this study we extract the the weak phase γ from three-body charmless decays of B mesons following a method proposed by Bhubanjyoti Bhattacharya, Maxime Imbeault and David London, Phys. Lett. B728 (2014) 206-209. The result is obtained combining BABAR amplitude analysis results for the processes $B^0 \rightarrow K_S K_S K_S$, $B^0 \rightarrow K^+ \pi^0 \pi^-$, $B^0 \rightarrow K_S K^+ K^-$, $B^0 \rightarrow K_S \pi^+ \pi^-$ and $B^+ \rightarrow K^+ \pi^+ \pi^-$ under the assumption of SU(3) flavour symmetry. We obtain six possible solutions, one of them which is consistent with the Standard Model. The effect of SU(3) breaking on the analysis is considered.